

WHAT IS CLAIMED IS:

1. An apparatus for printing on a continuous web of linerless tape for subsequent application to an article, the continuous web of linerless tape defined by a print side and an adhesive side, the apparatus comprising:
 - a support for a continuous web of linerless tape;
 - an undriven platen roller located downstream of the support;
 - a print head associated with the undriven platen roller, wherein the undriven platen roller directs the continuous web of linerless tape past the print head for printing on the print side thereof; and
 - a driven roller positioned adjacent the platen roller and downstream of the print head for pulling the web of linerless tape from the platen roller.
2. The apparatus of claim 1, wherein the adhesive side carries an adhesive, wherein the driven roller includes a contact surface for engaging the linerless tape, and wherein the contact surface is configured to minimize adhesion with the adhesive side.
3. The apparatus of claim 2, wherein the contact surface includes a knurled surface for minimizing a surface area of the contact surface.
4. The apparatus of claim 1, wherein the apparatus is configured to process linerless tape having a thickness less than 90 microns.
5. The apparatus of claim 1, wherein the driven roller is positioned relative to the platen roller to define a wrap angle of the web of linerless tape around the driven roller of between 10° - 180° .
6. The apparatus of claim 1, wherein the print head is a thermal transfer print head and the apparatus further comprises a ribbon, passed between the print head and the web of linerless tape for printing on the print side thereof.

7. The apparatus of claim 1, wherein the platen roller is beneath opposite the print head for supporting the linerless tape during a printing operation.

8. An apparatus for printing on a continuous web of linerless tape for subsequent application to an article, the continuous web of linerless tape defined by a print side and an adhesive side, the apparatus comprising:

a support for a continuous web of linerless tape;

a driven platen roller located downstream of the support;

a print head associated with the driven platen roller, wherein the driven platen roller directs the continuous web of linerless tape past the print head for printing on the print side thereof; and

a driven roller positioned adjacent the platen roller and downstream of the print head for pulling the web of linerless tape from the platen roller.

9. The apparatus of claim 8, further comprising a belt connecting the driven roller and the driven platen roller, and a first drive motor for rotating either the platen roller or the driven roller.

10. The apparatus of claim 8, further comprising a first drive motor for rotating the driven platen roller and a second drive motor for rotating the driven roller.

11. The apparatus of claim 10, wherein the first drive motor rotates the platen roller a first surface speed, wherein the second drive motor rotates the driven roller a second surface speed, and wherein the second surface speed is greater than or equal to the first surface speed.

12. The apparatus of claim 10, wherein when the printer is printing, the first drive motor rotates the platen roller and the second drive motor does not rotate the driven roller, and wherein when the printer is not printing, the first drive motor does not rotate the drive motor and the second drive motor rotates the driven roller.

13. The apparatus of claim 12, wherein after the printer stops printing, the print head moves away from the platen roller.

5 14. The apparatus of claim 10, wherein the driven roller is rotated at a surface speed greater than or equal to that of the driven platter roller.

10 15. The apparatus of claim 10, wherein the adhesive side carries an adhesive, wherein the driven roller includes a contact surface for engaging the linerless tape, and wherein the contact surface is configured to minimize adhesion with the adhesive side.

16. The apparatus of claim 15, wherein the contact surface includes a knurled surface for minimizing a surface area of the contact surface.

15 17. The apparatus of claim 10, wherein the apparatus is configured to process linerless tape having a thickness less than 90 microns.

20 18. The apparatus of claim 10, wherein the driven roller is positioned relative to the platen roller to define a wrap angle of the web of linerless tape along the platen roller between 10°-180°.

19. The apparatus of claim 10, wherein the print head is a thermal transfer print head and the apparatus further comprises a ribbon, passed between the print head and the web of linerless tape for printing on the print side thereof.

25 20. The apparatus of claim 10, wherein the platen roller is opposite the print head for supporting the linerless tape during a printing operation.

30 21. The apparatus of claim 10, further comprising:
a one-way clutch bearing in the driven platen roller; and
a one-way clutch bearing in the driven roller.

22. A method of printing indicia on a continuous web of linerless tape for subsequent application to an article, the web of linerless tape defined by a print side and an adhesive side, the method comprising:

providing a print head associated with an undriven platen roller;

providing a driven roller, positioned adjacent the platen roller downstream of the print head;

providing a continuous web of linerless tape;

extending the web of linerless tape along a tape path from the undriven platen roller to the driven roller such that the undriven platen roller contacts the adhesive side and the driven roller contacts the adhesive side;

driving the web of linerless tape past the print head;

rotating the driven roller to drive the web of linerless tape past the print head and to pull a portion of the web of linerless tape from the platen roller; and

printing indicia on the print side with the print head.

23. The method of claim 22, wherein providing a continuous web of linerless tape includes providing a web of linerless tape having a thickness of less than about 90 microns.

24. The method of claim 22, wherein providing a web of linerless tape includes providing a web of linerless tape carrying an adhesive on the adhesive side.

25. The method of claim 22, wherein extending the web of linerless tape along a tape path includes establishing a wrap angle of linerless tape around the driven roller between 10°-180°.

26. The method of claim 22, wherein the printing device is a thermal transfer printer and further includes a continuous ribbon disposed between the print head and the print side of the web of linerless tape.

27. The method of claim 22, wherein the adhesive side carries an adhesive, and wherein the driven roller includes a contact surface for engaging the linerless tape, the contact surface being configured to minimize adhesion with the adhesive side.

5 28. The method of claim 27, wherein the contact surface includes a knurled surface for minimizing the surface area of the contact surface.

29. A method of printing indicia on a continuous web of linerless tape for subsequent application to an article, the web of linerless tape defined by a print side and an
10 adhesive side, the method comprising:

 providing a print head associated with a driven platen roller;
 providing a driven roller, the driven roller positioned adjacent the platen roller
 downstream of the print head;
 providing a continuous web of linerless tape;
15 extending the web of linerless tape along a tape path from the platen roller to the
 driven roller such that the platen roller contacts the adhesive side and the
 driven roller contacts the adhesive side;
 driving the platen roller to pull the web of linerless tape past the print head when
 the print head is printing indicia on the print side of the linerless tape; and
20 driving the driven roller to pull a portion of the web of linerless tape from the
 platen roller when the print head is not printing indicia on the print side of
 the linerless tape.

30. The method of claim 29, further comprising:
25 providing a first drive motor attached to the platen roller for rotating the platen
 roller; and
 providing a second drive motor attached to the driven roller for rotating the drive
 roller.

31. The method of claim 30, wherein the first drive motor rotates the platen roller
30 at a first surface speed, wherein the second drive motor rotates the driven roller at a second

surface speed, and wherein the second surface speed is greater than or equal to the first surface speed.

5 32. The method of claim 29, wherein the adhesive side carries an adhesive, and wherein the driven roller includes a contact surface for engaging the linerless tape, the contact surface being configured to minimize adhesion with the adhesive side.

10 33. The method of claim 32, wherein the contact surface includes a knurled surface for minimizing the surface area of the contact surface.

 34. The method of claim 29, wherein providing a continuous web of linerless tape includes providing a web of linerless tape having a thickness of less than about 90 microns.

15 35. The method of claim 29, wherein extending the web of linerless tape along a tape path includes establishing a wrap angle of linerless tape around the driven roller of between 10°-180°.

20 36. The method of claim 29, wherein the printing device is a thermal transfer printer and further includes a continuous ribbon disposed between the print head and the print side of the web of linerless tape.

 37. The method of claim 29, further comprising:
25 moving the print head away from the platen roller after the print head stops printing.